



TOWARDS BETTER ONSITE WASTEWATER MANAGEMENT IN VICTORIA - COMMUNITY EDUCATION SERIES

FACT SHEET 6: COMMON DISPOSAL METHODS FOR ONSITE WASTEWATER MANAGEMENT

This fact sheet will be of interest to you if you are selecting an onsite domestic wastewater management system for your property, or if you currently have a conventional septic tank system or package treatment plant on your property. (Please check with your local environmental health practitioner (EHP or EHO) to ensure you get all the requirements for your area.)



6.1 PRESSURE COMPENSATED SUB SURFACE IRRIGATION (PCSS)

SUITABLE FOR TREATMENT PLANTS & SEPTIC TANK WITH A SAND FILTER

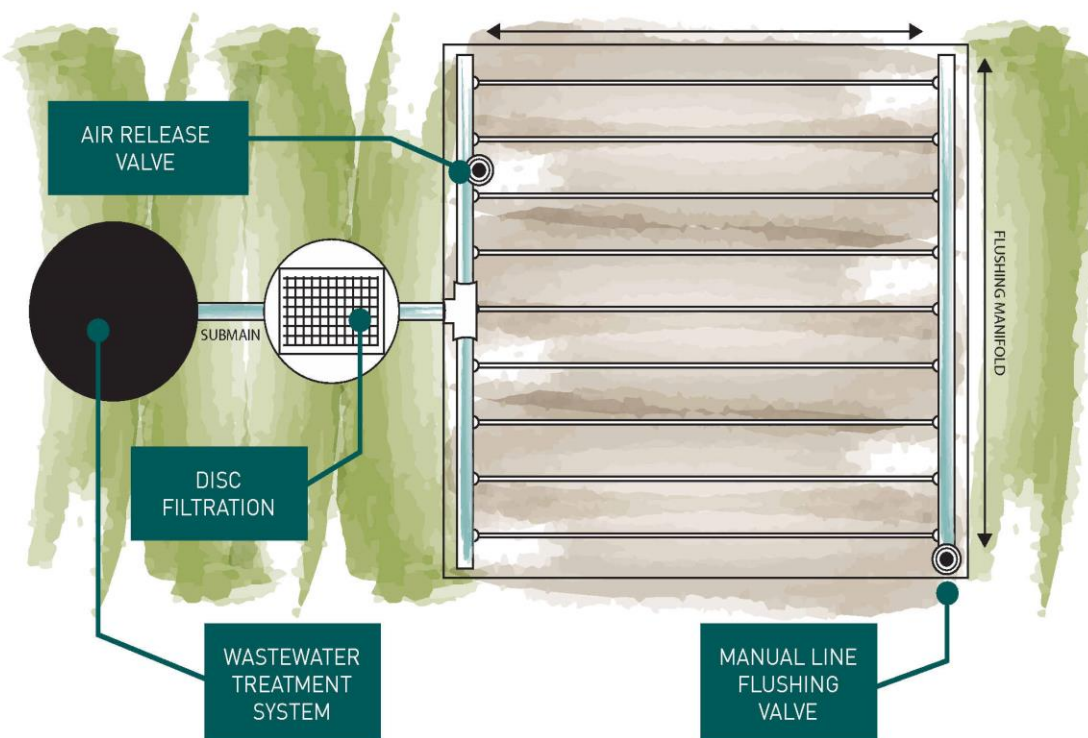
6.1.1 WHAT IS IT?

Pressure compensated sub surface drip irrigation is a closed network of small diameter pipes fitted with low-flow drip emitters that are buried just below the surface of the ground. The pressure compensation of the network design allows for an even disposal of wastewater over the area of the installation.

Such systems are growing in popularity, but rely on a number of components to function correctly.

N.B. These systems should not be confused with Low Pressure Effluent Disposal which are systems that are not pressure compensated networks.

6.1.4 SUB SURFACE IRRIGATION - COMPONENTS AND DESIGN



6.1.2 IMPORTANT COMPONENTS AND DESIGN:

- **Mesh/disc filter (minimum 150 mesh)** – an inline filter that removes suspended particles from the wastewater before it enters the irrigation network;
- **Drip Line with low flow emitters** – a specialised irrigation line fitted with specialised emitters that expel wastewater at a measured rate;
- **Vacuum breaker/air Inlet valve** – this valve acts to overcome pressure differentials experienced in the pipe network at different phases of pump operation. Primarily it prevents soil from being drawn into the drip line at times of negative pressure;
- **Flush/scour valve** – this valve allows for accumulated particles and bacterial biofilms to be flushed out of the pipe network, preventing clogging;
- **Root inhibitor (dosing agent)** – trifluralin (or similar) dosing units may be required to prevent root infiltration, if the drip line does not have an integrated physical root barrier. Check with your distributor whether the drip line is fitted with a physical root barrier.

6.1.3 SOME SIMPLE STEPS TO A HEALTHY PCSS IRRIGATION SYSTEM:

- **Flushing** – PCSS systems should be periodically flushed to remove sediment that has accumulated in the pipe network. Flushing the irrigation system prevents clogging of the drip lines that can result in costly failures. Ensure your servicing agent completes this task each time they service your packaged treatment plant;
- **Rotation** – this step will only apply to your system if you have multiple irrigation fields and do not have an automatic rotation device. Ensure you regularly rotate the use of each of your irrigation fields, as it will allow the fields to rest adequately. This will extend the life of your irrigation system. Be sure to follow your licensed plumbing practitioner's instructions when rotating irrigation fields to maintain a suitable load for the system's pump unit;
- **Filter replacement** – to ensure the mesh/disc filter continues to adequately protect your irrigation system, it must be replaced annually;
- **Servicing** – it is mandatory for your packaged treatment plant to be serviced by a qualified service agent every three months. Ensure your service agent assesses and services both your packaged treatment plant as well as your irrigation system;
- **Soil maintenance** – should the soil in your irrigation area begin to crust or tunnel, apply gypsum to the area to repair the soil. If the issue continues, contact your licensed plumbing practitioner for an assessment of the irrigation system, as there may be an underlying issue causing the soil to crust or tunnel.

6.2 SURFACE DRIPPER IRRIGATION:

SUITABLE FOR TREATMENT PLANTS

6.2.1 WHAT IS IT?

Surface dripper irrigation is a common historic wastewater disposal method. The system comprises dripper modules that project from the ground and release small volume drips of wastewater onto the ground surface for absorption by plants and evaporation by the sun. Check with your local government environmental health practitioner whether this system is permitted to be installed in your area.

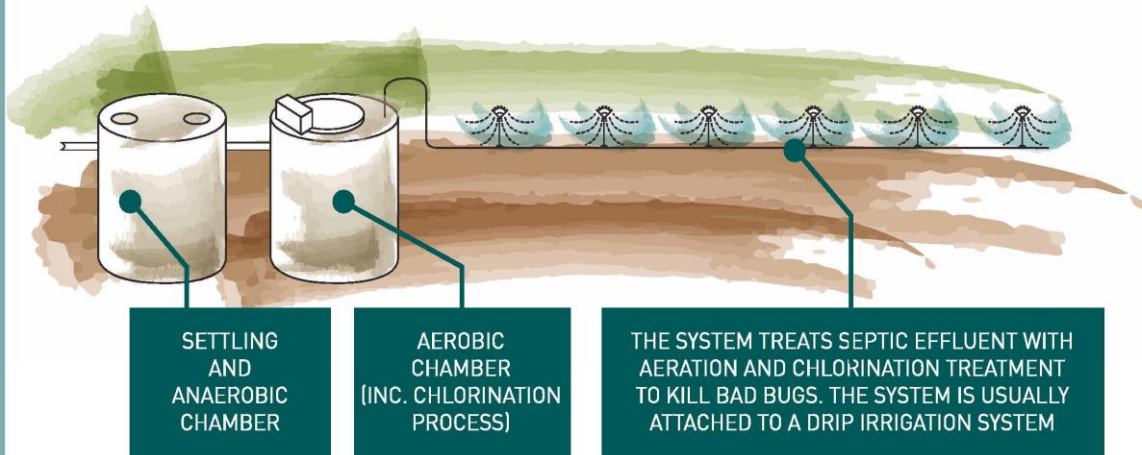
This method of disposal is now no longer permitted in some areas, as it can present a significant risk to the natural environment and public health. However, there is no need to panic just yet. If your system relies on surface discharge, it is unlikely that you will be required to change it unless one or more of the following circumstances arises:

- Your system fails and requires repair or replacement;

- The risk of environmental degradation or health impacts becomes too great;
- A reticulated sewer becomes available in your area;
- You alter your house design or any plumbing fixtures attached to your septic tank system;
- Your wastewater system no longer meets the water quality standards it is required to achieve ; or
- You have been given an order by local government or other relevant wastewater or environmental protection agency to upgrade the wastewater management system.

Therefore, it is in your interest to maintain your wastewater management system to the highest standard possible in order to protect the natural environment, your community, your family's health and your hip-pocket.

6.2.2 IMPORTANT COMPONENTS AND DESIGN:



6.2.3 SOME SIMPLE STEPS TO A HEALTHY SURFACE DRIPPER IRRIGATION SYSTEM:

- **Flushing** – surface irrigation systems should periodically be flushed to remove sediment that has accumulated in the pipe network. Flushing the irrigation system prevents clogging of the irrigation lines that can result in costly failures. Ensure your servicing agent completes this task each time they service your packaged treatment plant;
- **Mulching** – it is vital to ensure your irrigation area is adequately covered in thick, heavy mulch. Mulch plays an important role in containing wastewater in the irrigation area. Overtime, the mulch will degrade and will need to be topped up. While straw and paper mulches are a cheap alternative, they are too light for this type of application. Instead a heavy mulch will retain wastewater and will not blow away in the wind;
- **Replanting** – vegetation is the primary method for the return of wastewater to the natural water cycle. Plants absorb and transpire up to 70% of all wastewater that is discharged from your irrigation system. Therefore, it is essential that you replace plants immediately should they die. Also, it may be an advantage to assemble protective barriers for your plants, as they are often destroyed by local wildlife;
- **Rotation** – frequently, surface irrigation systems are constructed to have a number of different irrigation areas that can be switched on and off by the system owner. By constructing multiple irrigation areas, it is possible to rest the soil and vegetation in an irrigation area should it become flooded. Be sure to rotate the irrigation areas you use frequently so that each area can be rested;
- **Filter replacement** – your surface irrigation system should be fitted with an inline strainer. This acts to remove suspended particles from the wastewater that can clog the irrigation lines and require costly repairs. If you have a filter fitted to your irrigation system, ensure that it is replaced annually.
- **Dripper head replacement** – dripper heads on your irrigation system will frequently require replacement. Commonly, wildlife interferes with these components and causes them to break off the irrigation line. Be sure to replace any missing dripper heads immediately as the wastewater must be retained in the irrigation area. They must be replaced with dripper heads that release only drips, as spray emitters can release aerosols that are extremely hazardous to your health and that of your family.

6.2.4 IMPORTANT COMPONENTS AND DESIGN

- **Irrigation line** – with risers and dripper heads
- **Vegetation** – select salt tolerant plants
- **Mulch** – aids to help the wastewater in the irrigation area.

6.3 EVAPO-TRANSPIRATION/ABSORPTION TRENCHES

SUITABLE FOR CONVENTIONAL SEPTIC TANKS, TREATMENT PLANTS & SEPTIC TANKS WITH A SAND FILTER

6.3.1 WHAT IS IT?

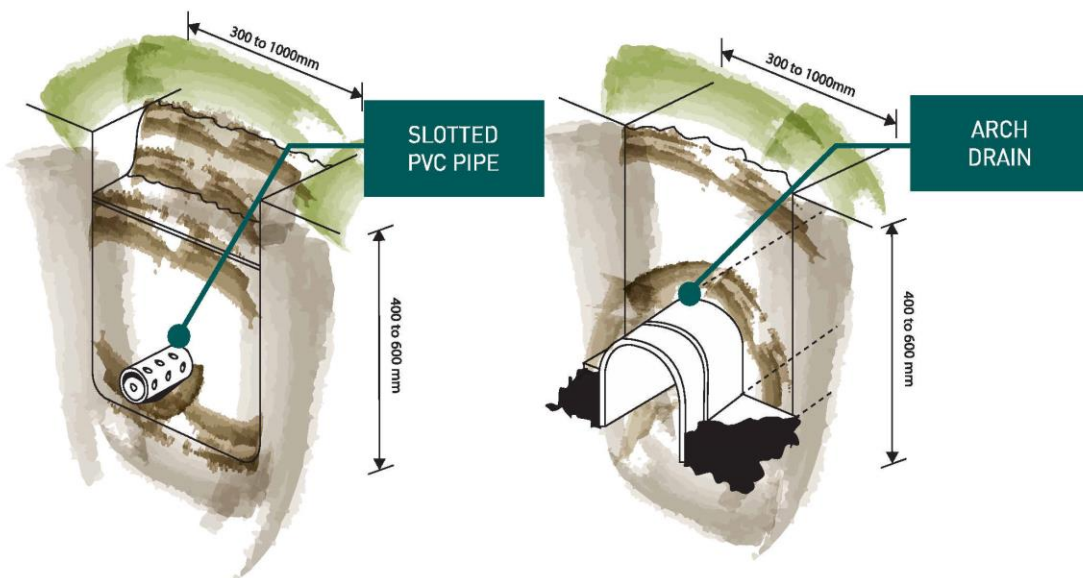
Evapo-transpiration/absorption trenches (ETA) are a common wastewater disposal method. Their design

has varied over time but their primary function remains the same.

6.3.2 ETA TRENCH DESIGN

ETA trenches are a very common method for effluent disposal. Modern designs involve the installation of slotted 90mm PVC pipe below the surface of the

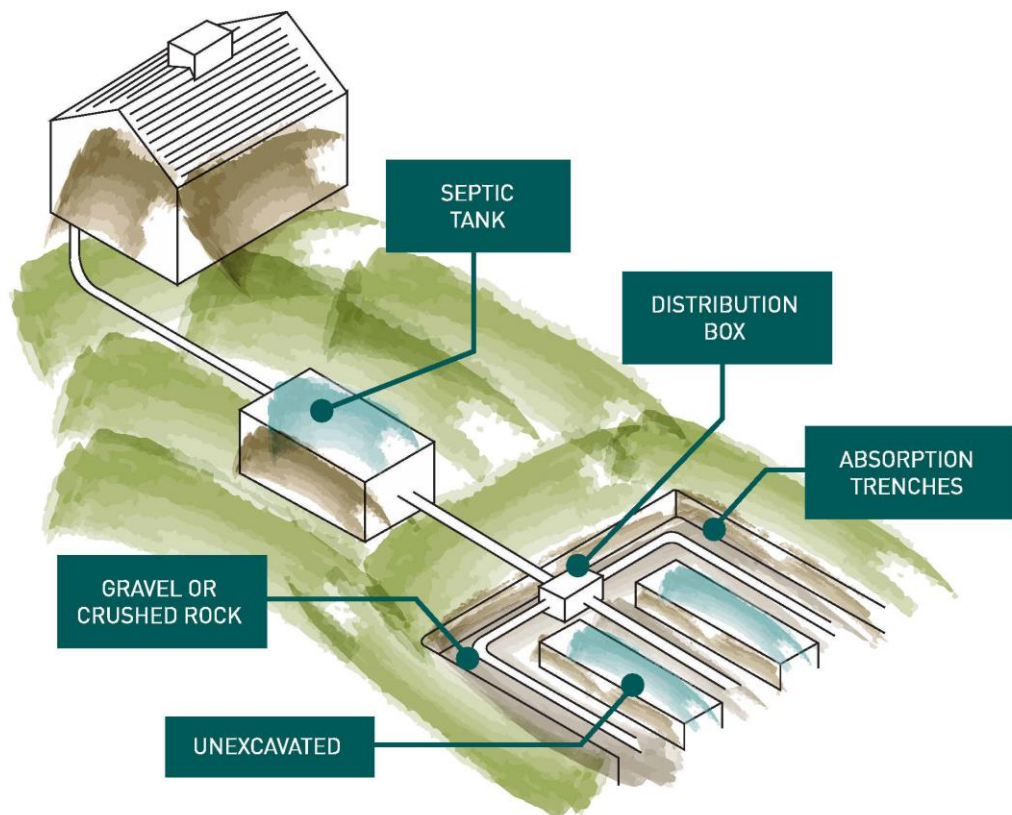
soil. Below is a diagram of a common trench design. Consult your local government environmental health practitioner for any local construction requirements.



6.3.3 SOME SIMPLE STEPS TO A HEALTHY ETA TRENCH SYSTEM

- Like all effluent disposal systems, ensure vehicles do not drive over the trenches as they can compact the soil and damage the trench system resulting in costly repairs;
- Should the soil in the area of the trenches begin to crust, apply gypsum to repair the soil;
- By installing a strainer at the outlet of your septic tank system, you can reduce the amount of particles entering the trench system and clogging the soil interface;
- Ensure all distribution boxes are accessible at the surface of the ground;
- Periodic assessment and adjustment of effluent distribution between trenches will allow for more even use of the trenches and greater longevity. Loosely fitting 90° bends to the end of the 90mm slotted PVC inside the distribution boxes can assist in making these adjustments; and
- If the effluent disposal area is subject to pooling of surface waters, smooth the surface of the soil to remove any pits and depressions and install a diversion drain upslope from the disposal area.

6.3.4 SEPTIC TANK WITH ETA TRENCHES



The surface of this trench area needs to be kept free of structures (e.g. sheds), paving, deep rooted trees etc, to ensure the trenches continue to work efficiently.

6.4 WHO TO CONTACT:



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